

A MONOGRAPH OF THE AUSTRALIAN
MEMBRACIDÆ.

BY F. W. GODING, M.D., Ph.D.

(Plate i.)

INTRODUCTION.

The *Membracidæ* are distinguished from the other Homoptera by the perpendicular head, the wonderful development and prolongation posteriorly of the prothorax, and the venation of the tegmina and wings, although all of these characters are more or less modified, gradually passing to those of closely related groups. An example of variation in the form of the head is seen in *Porcorhinus*, where it is horizontal and shovel-shaped, while in the prothorax the posterior process may be absent as in the same genus. The normal number of veins passing from the base of the corium is three, yet in some of the genera there is but one.

The head is usually perpendicular; when viewed from the front it is triangular, quadrilateral, or bandeau-shaped, with the large globular eyes on each side of the base, between which are the ocelli. The prothorax usually covers the chest and abdomen, but in all the Australian forms examined by me the scutellum is more or less exposed. Above the attachments of the tegmina are the lateral angles, which may be prominent or obsolete. The dorsum may be convex, tectiform, flat or elevated in protuberances or horns, and extends, posteriorly, in a variously shaped process, which, however, may be absent, and nearly always there is present a percurrent median longitudinal carina. When the posterior process is absent, the scutellum frequently is furnished with horns or spines, and in form it is usually triangular, the apex termi-

nating in one or two small teeth. The tegmina (upper wings) are more or less lanceolate, and are divided into two distinct parts, the corium and the clavus. The former occupies the greater portion, and has, arising from the base, the costa and three longitudinal veins, the radial and two ulnar, which are forked to form, with transverse venules, the variously formed cells. These are usually the costal, radial, two ulnar, one or more discoidal (these may be absent), and five apical cells, the last a distinguishing characteristic of this group. The clavus occupies the interior of the tegmina, being separated from the corium by a suture, which is represented in the plate of this work by dotted lines. It has one or two veins arising from the base, and may have the sides parallel or gradually narrowed to the apex. The tegmina may be free, or more or less covered by the lateral borders of the posterior process of the prothorax, the free part more or less coriaceous and opaque. They are surrounded by a margin which may be very narrow, the veins even reaching the edges, or very broad, occupying nearly one-half of the tegmina. The wings (lower wings) are also divided into two parts, the corium and clavus, the former having the costa and three longitudinal veins arising from the base, forming three basal and three or more apical cells, while the clavus may have one or two basal veins. They are always vitreous, iridescent, and transparent. The legs consist of the femora, tibiæ, and tarsi. The femur is cylindrical and curved, the tibia quadrangular, prismatic or spatulate, while the tarsus is composed of three articles, the first long, the other two short, the last ending in two claws.

As regards the habits of the *Membracide* all that need be mentioned is well told by Mr. Froggatt in an article which is copied in these pages under *S. virescens* (p. 11).

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Hutton, Christchurch, N.Z., I am indebted for information as to the *Membracide* not having been found in that Colony.

In working out the identity of the described Australian species, great difficulty was experienced, owing to the meagreness and indefiniteness of the published descriptions of Walker and Fairmaire. Stal experienced the same trouble, and practically refused to recognise Walker's work. However, in this I believe him to have erred. Where a species can be identified from the description, illustration, or type, I always recognise it; hence I believe that the synonymy as given in the following pages is correct.

When sufficient material shall have been collected to form a complete duplicate series, my types of the Australian forms will be deposited in some Museum in this Commonwealth for the benefit of students.

Species preceded by an asterisk (*) are in my collection.

CHECK LIST OF AUSTRALIAN MEMBRACIDÆ.

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|---------------------------------|---------------------------------|
| TERENTIUS, Stal. | SERTORIUS, Stal. |
| 1. <i>convexus</i> , Stal. | 12. <i>australis</i> , Fairm. |
| DINGKANA, Godg. | <i>C. obstans</i> , Walk. |
| 2. <i>borealis</i> , Godg. | <i>C. binotatus</i> , Walk. |
| SEXTIUS, Stal. | 13. <i>acanthaspis</i> , Fairm. |
| 3. <i>bipunctatus</i> , Fabr. | <i>C. decisus</i> , Walk. |
| 4. <i>depressus</i> , Godg. | 14. <i>giganticus</i> , Godg. |
| 5. <i>virescens</i> , Fairm. | 15. <i>brevicornis</i> , Godg. |
| <i>C. suffusa</i> , Walk. | 16. <i>Tepperi</i> , Godg. |
| ACANTHUCUS, Stal. | 17. <i>areolatus</i> , Godg. |
| 6. <i>rufiventris</i> , Walk. | 18. <i>curvicaudus</i> , Godg. |
| 7. <i>trispinifer</i> , Fairm. | EUFRENCHIA. |
| 8. <i>gracilispinus</i> , Stal. | 19. <i>falcata</i> , Walk. |
| 9. <i>conspurcatus</i> , Stal. | <i>S. curvicornis</i> , Stal. |
| 10. <i>bispinus</i> , Stal. | 20. <i>Lee</i> , Godg. |
| 11. <i>Kershawi</i> , Godg. | |

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|----------------------------------|--------------------------------|
| CENTROTYPUS, Stal. | 27. <i>gracilis</i> , Godg. |
| 21. <i>occidentalis</i> , Godg. | EUTRYONIA, Godg. |
| 22. <i>minutus</i> , Godg. | 28. <i>monstrifera</i> , Walk. |
| LUBRA, Godg. | <i>O. ponderifer</i> , Walk. |
| 23. <i>spinicornis</i> , Walk. | (?) HYSOPRORA, Stal. |
| 24. <i>regalis</i> , Godg. | 29. <i>cassis</i> , Buck. |
| DAUNUS, Stal. | (?) PHILYA, Walk. |
| 25. <i>vitta</i> , Walk. | 30. <i>parvula</i> , Buck. |
| <i>O. contorta</i> , Walk. | EUFROGGATTIA, Godg. |
| 26. <i>Tasmaniae</i> , Fairm. | 31. <i>tuberculata</i> , Godg. |
| <i>C. contractus</i> , Walk. | PORCORHINUS, Godg. |
| <i>C. truncaticornis</i> , Walk. | 32. <i>Mastersi</i> , Godg. |

SYNOPSIS OF SUBFAMILIES OF THE MEMBRACIDÆ.

- 1 (2). Scutellum distinct, produced beyond metanotum, and furnished with acute apical angles *Centrotineæ*.
- 2 (1). Scutellum obsolete or wanting, not extending beyond metanotum.
- 3 (10). Tarsi of equal length, or posterior longer than anterior pairs.
- 4 (9). Tibiæ simple, not dilated.
- 5 (6). Tegmina folded behind clavus, free portion coriaceous, opaque, with scarcely distinguishable veins externally; clavus and interior basal cell of corium broadened toward apex, intermediate apical cell petiolate in the coriaceous part *Tragopineæ*.
- 6 (5). Tegmina entirely membranous; veins distinct.
- 7 (8). Third apical cell elongate, never petiolate..... *Daruineæ*.
- 8 (7). Third apical cell subtriangular, petiolate adjacent cells contiguous *Smiliineæ*.
- 9 (4). Tibiæ and lateral borders of head dilated, foliaceous. *Membracineæ*.
- 10 (3). Posterior tarsi small, shorter than anterior pairs..... *Hoplophorineæ*.

SYNOPSIS OF THE GENERA FOUND IN AUSTRALIA.

- 1 (24). Prothorax furnished with a posterior process which nearly covers scutellum.
- 2 (5). Dorsum of prothorax unarmed, convex.
- 3 (4). Corium with two discoidal cells..... *Terentius*, p. 7.
- 4 (3). Corium with three discoidal cells..... *Dingkana*, p. 8.

- 5 (2). Dorsum of prothorax armed with one or more horns or protuberances.
- 6 (11). Dorsum in front, furnished with one protuberance.
- 7 (10). Dorsal protuberance erect, much thickened, gibbous posteriorly near base.
- 8 (7). Apex of dorsal protuberance much dilated on each side, exteriorly a sharp, slender, directly diverging spine..... *Eutryonia*, p. 34.
- 9 (8). Apex of dorsal protuberance not dilated laterally, destitute of lateral spines..... *Hypsoprora*, p. 35.
- 10 (7). Dorsal protuberance porrect, slightly ascending *Philya*, p. 36.
- 11 (6). Dorsum of prothorax with two or more protuberances or horns.
- 12 (23). Dorsum with two horns, one over each lateral angle.
- 13 (16). Lateral horns dilated at apices; more or less erect, contiguous at base.
- 14 (15). Apices of lateral horns reticulate, exteriorly with a spine; interior angle acuminate or gibbous, sometimes forming an arch..... *Lubra*, p. 28.
- 15 (14). Apices of lateral horns not reticulate, and destitute of exterior spines but acuminate, the interior angle not gibbous..... *Dannus*, p. 30.
- 16 (13). Lateral horns not dilated at apices, more or less acuminate.
- 17 (18). Tibiæ dilated, venation in apical part of corium very irregular, forming many cellules; posterior process tectiform..... *Sextius*, p. 9.
- 18 (17). Tibiæ not dilated (one exception); venation regular (one exception, third apical cell divided); posterior process not tectiform.
- 19 (22). Two ulnar veins joined, near base, with a transverse venule.
- 20 (21). Corium with two discoidal cells..... *Sertorius*, p. 18.
- 21 (20). Corium with three discoidal cells.. *Eufrenchia*, p. 24.
- 22 (19). Two ulnar veins, not joined, near base, with a transverse venule... *Centrotypus*, p. 26.
- 23 (12). Dorsum with three protuberances or horns, lateral horns, conical, acuminate; the third placed on the median carina is a triangular spine or angle, or median carina lightly and briefly foliaceous..... *Acanthucus*, p. 13.

- 24 (1). Prothorax destitute of a posterior process; scutellum everywhere visible.
- 25 (26). Scutellum short, triangular; head produced in a large shovel-shaped form; venation of corium interrupted by transverse venules, cells difficult to distinguish; with two basal veins; clavus with two veins..... *Porcorhinus*, p. 38.
- 26 (25). Scutellum reaching posterior end of body broad, sides parallel, apex broadly and obtusely rounded; head small, triangular, produced downward; base of scutellum with a truncated pyramidal protuberance at base; everywhere tuberculate; one-fourth of tegmina densely opaque, coriaceous veins barely distinguishable, lying flat on tergum beneath scutellum *Eufroggattia*, p.37.

TERENTIUS, Stal.

1866, Hemiptera Africana, iv. p. 87.

Prothorax moderately convex, unarmed above lateral angles; posterior process broad, then narrowed, acuminate, convex, a little narrower at base over scutellum which it touches, sinuate on each side, anteriorly furnished with an abbreviated carina; tectiform posteriorly.

Tegmina transparent, furnished between two interior longitudinal veins with a transverse venule near base, two discoidal cells, the interior petiolate, costal cell but little longer extended than radial, the former punctured; clavus not gradually narrowed to apex, furnished with two veins.

Wings with four apical cells.

Scutellum truncated at apex, on each angle a little tooth.

Tibiæ and tarsi simple, not dilated.

Type, *T. convexus*, Stal.

*T. CONVEXUS, Stal.

(Plate i., figs. 8 and 14.)

1869, Ofv. K. Vet.-Akad. Forh. p. 286.

Head densely punctured, front lightly inflexed, distinctly lobed at each side on lateral borders; ocelli above a line passing through centre of eyes.

Prothorax piceous, densely punctured, furnished with an almost obsolete median line, convex; posterior process broad and convex at base, much narrowed at middle, then very slender and acuminate, a longitudinal ruga below the middle, posteriorly elevated in a carina, apex distinctly curved downward, reaching tip of abdomen.

Tegmina vitreous, obscure at base, base and costa dilute piceous, radial and ulnar veins towards apex and veins including the discoidal cells blackish, the two discoidal cells of equal length.

Chest with sides dense silky gray, pubescent.

Legs with femora and base of tibiæ piceous, rest of tibiæ sordid yellow, tarsi piceous.

Long. 7; lat. 3 mm.

Type in Mus. Holm.

Food plant, *Hakea* sp.

Hab.—Rockhampton (Stal), Brisbane, Cairns, Q. (Tryon); Tweed River, N.S.W. (Froggatt); Williamstown, S.A. (Tepper).

As *T. convexus* and *Sertorius australis* differ only in absence and presence of lateral horns, I believe them to be two forms of one species.

D I N G K A N A, gen.nov.

Head triangular, punctured, pubescent, lobed on each side on lateral borders; ocelli above a line passing through centre of eyes to which they are a little nearer than to each other.

Prothorax rises convexly from base into the form of a dome, unarmed above lateral angles, coarsely punctured, median longitudinal carina anteriorly absent or obsolete; posteriorly the dorsum lightly descends into the posterior process which is very broad at base, gradually narrowed to middle, then attenuated to apex which is decurved reaching apex of abdomen; sides and dorsum of posterior process lightly sinuate.

Tegmina lanceolate, vinaceous, opaque at base, with three discoidal cells, the second and third placed between the two ulnar veins, the first between apex of radial and base of second apical

cells; costa and radial vein piceous and punctured; destitute of a transverse venule between two ulnar veins, near the base.

Wings with four apical cells.

Legs simple.

Type, *D. borealis*, Godg.

Dingkana (dingkan—an insect, in the Koka-Yimidir language) differs from *Terentius* chiefly in the presence of three discoidal cells, the dorsum more elevated and dome-like, and the absence of a transverse venule between ulnar veins, near base; also in the position of the ocelli.

**D. BOREALIS*, sp. nov.

(Plate i., fig. 21.)

Head piceous, finely punctured, front strongly inflexed, lobed on each side.

Prothorax convex, sordid black, finely punctured, narrowed behind lateral angles, extended in a long slender process, not sinuate below, sinuate above, reaching tip of abdomen, and nearly reaching apices of tegmina, the apex strongly and lengthily curved downward, the process touching the interior borders of tegmina the entire length.

Tegmina vitreous, vinaceous, punctured, ferruginous and opaque at base, radial and costal veins, and those including discoidal cells, ferruginous; second and third discoidal cells of equal length, the first much shorter.

Tibiæ yellowish brown.

Long. 5; lat. 2 mm.

Described from one female.

Type in Coll. F.W.G.

Hab.—Cairns, Q. (Tryon).

SEXTIUS, Stal.

Hemiptera Africana, iv. p. 88.

Prothorax elevated, perpendicular for a distance from base, with a percurrent median carina, armed on each side, above

lateral angles, with an acute, triquetrous, diverging horn, or angulate; posterior process tectiform, a little concave below, the sides of the scutellum barely visible.

Tegmina with the apical portion of corium marked by the presence of many venules, which divide it into numerous apical cellules; costal cell punctured, opaque, extending beyond radial; exterior discoidal cell not petiolate; clavus punctured and opaque over basal half, not gradually narrowed towards apex, with two veins.

Wings with four apical cells.

Tibiæ dilated.

Type, *Centrotus virescens*, Fairm.

SYNOPSIS OF SPECIES.

- 1 (4). Prothorax armed with a horn above each lateral angle.
 2 (3). Lateral horns directed outward, depressed towards apex, never turned upward; dorsum between lateral angles flat, never convex; corium destitute of a transverse venule between two ulnar veins..... *depressus*.
 3 (2). Lateral horns turned outward and upward; dorsum between lateral horns convex; corium furnished with a transverse venule between two ulnar veins near base. *virescens*.
 4 (1). Prothorax unarmed or lightly tuberculate above lateral angles; a black spot on interior vein of clavus..... *bipunctatus*.

*S. VIRESCENS, Fairm.

(Plate i., fig. 2.)

1846, *Centrotus virescens*, Ann. Soc. Ent. Fr. (2), iv. p. 515.

1851, *Ceresia suffusa*, Walk., List Hom. Brit. Mus., p. 530.

Pale greenish or tawny, punctured, sometimes marked with piceous.

Prothorax with the lateral horns directed outward, slightly upward, usually much more elevated than the dorsum which is convex between the horns; posterior process long, slender, tectiform, extended nearly to apices of tegmina, tip decurved.

Tegmina pale tawny, a transverse venule between the two ulnar veins, near the base, the interior discoidal cell long and

petiolate; basal half of costal, radial cells and clavus punctured and opaque.

Femora frequently black, tibiæ and tarsi tawny. Chest frequently piceous.

Long. 6 to 8; lat. (incl. lat. corn.) 3 to 4 mm.

Types in Coll. Fairmaire, and in British Museum.

Food plant, *Acacia decurrens*.

Hab.—New Holland (Fairmaire); Tarago, Clarence R., Gosford, Loftus, Wollongong, Bungendore, Homebush, N.S.W. (Lea); Maitland, Sydney, Penrith, Kempsey, Uralla, N.S.W. (Froggatt); Newcastle, N.S.W. (Hays); Brisbane (Tryon); Townsville, Q. (Dodd); Victoria (Stowell); Gisborne, Vic. (French); South Australia (Tepper); Pine R., Geraldton, West Australia (Lea).

This species is the most common membracid in Australia and the most widely distributed. Among those examined are the form *suffusa*, Walk., with the foreparts dusky, others with the head and chest black, and others variously marked with brown; the venation of the tegmina is very variable, there being a strong tendency to the presence of small venules.

Mr. Froggatt, in a most interesting article entitled "Insects of the Wattle Trees," which appeared in the 'Agricultural Gazette' for July, publishes the only account which has appeared on the habits of any of the Australian *Membracide*. He says, "This (*virescens*) is one of the commonest insects upon the young wattles, where they are much sought after by several species of ants that come to obtain the sugary secretions, popularly known as "honey dew," that they discharge from the abdominal glands. The female slits the bark with her ovipositor and lays the eggs in rows, the young larvæ and pupæ, as well as the perfect insects, being found clustering along the branchlets, but as soon as disturbed they crawl round the twig away from their enemies, and when touched they spring from the hind legs and jump for a considerable distance." The above graphic account is practically true of most of the *Membracide*, but some of the species of *Tragopa*, at least, live in the ground in the nests of ants.

**S. DEPRESSUS*, sp.nov.

(Plate i., fig. 24.)

Green, tawny when dried.

This species, in a general way, is closely related to *virescens*; it differs in being smaller, lateral horns shorter and stronger, directed outward, not at all upward, the apical part depressed; the dorsum between the horns is flat, never convex; corium destitute of a transverse venule between two ulnar veins, near base.

Long. 5 to 7; lat. (incl. lat. corn.) 2 to 3 mm.

Described from nineteen males and females.

Types in Coll. F.W.G.

Food plant, *Acacia decurrens*.

Hab.—Pinjarrah, Bridgetown, West Australia (Lea): Brisbane, Q. (Tryon): Sydney, Rye Bay, Kempsey, Richmond R., Wollongong, Tweed R., Maitland, N.S.W. (Froggatt).

This species may be easily separated from *virescens* by the depressed appearance of the dorsum and horns, when viewed from the front, and absence of a transverse venule, near base of tegmina.

S. BIPUNCTATUS, Fabr.

1775, *Membracis 2-punctata*, Syst. Ent. p. 677.

1781, *Membracis 2-punctata*, Spec. Ins. ii., p. 318.

1787, *Membracis 2-punctata*, Mant. Ins. ii., p. 265.

1803, *Centrotus 2-punctatus*, Syst. Rhyng. ii., p. 19.

1869, *Sextius bipunctatus*, Stal, Hem. Fabr. ii., p. 52.

Yellowish gray.

Head very obtuse, short, front strongly inflexed.

Prothorax angulate only, or tuberculate, above lateral angles.

Tegmina tawny, a black spot on the middle of the interior vein of clavus, apex furnished with many cells.

I have not seen an example of this species, but doubt if it is distinct from *virescens*, which would then become a synonym.

The above description is but a translation of the one given by Stal. The measurement is not mentioned.

Type in Mus. Holm.

Hab.—New Holland (Fabricius).

ACANTHUCUS, Stal.

1866, Hemiptera Africana, iv. p. 87.

Prothorax elevated, rising vertically from the base, furnished with an acute triquetrous horn on each side, above lateral angles; posterior process slender, more or less sinuate, the median longitudinal carina between and behind lateral horns briefly foliaceous or elevated in a high tooth or horn.

Tegmina with the corium furnished with five oblong apical and two discoidal cells; costal cell extended beyond radial; the two interior longitudinal veins destitute of a transverse venule near base; clavus with two veins, gradually narrowed to apex.

Wings with four apical cells.

Scutellum with apex truncated, ending, on each side, in a little tooth.

Tibiæ and tarsi simple, not dilated.

Type, *Centrotus trispinifer*, Fairm.

SYNOPSIS OF SPECIES.

- 1 (3). Dorsum of posterior prothoracic process furnished with an acute elevation behind lateral horns.
- 2 (3). Posterior process far distant from the interior borders of closed tegmina, dorsum with a second elevation which is a high, triangular, acuminate horn; apical cells of corium crescent-shaped, base curved toward interior..... *rufiventris.*
- 3 (2). Posterior process touching interior borders of closed tegmina throughout, with a second elevation an obtuse angle; apical cells of corium straight.
- 4 (5). First dorsal elevation an acute angle..... *trispinifer.*
- 5 (4). First dorsal elevation a slender spine..... *gracilispinus.*
- 6 (1). Posterior prothoracic process not horned behind the lateral horns, but the median carina is somewhat elevated in an obtuse angle, or lightly foliaceous.

- 7 (11). Dorsal carina behind lateral horns elevated in an obtuse angle.
- 9 (10). Lateral horns short, turned outward and downward; size very small *Kershawi*.
- 10 (9). Lateral horns long, curved outward and upward; size large..... *conspicatus*.
- 11 (7). Dorsal carina lightly foliaceous behind lateral horns, not angulate..... *bispinus*.

*A. RUFIVENTRIS, Walk.

(Plate i., fig. 13.)

1861, *Centrotus rufiventris*, Walk., List Hom. Brit. Mus. p. 616.

Ferruginous, with a golden pubescence.

Head piceous, triangular, minutely punctured, ocelli on a line passing through centre of eyes, and a little nearer to each other than to the eyes.

Prothorax roughly punctured, front lightly inclined backward; lateral horns stout, extending outward and a little upward, towards the apex curved slightly to the horizontal, on the superior surface an obsolete carina; dorsal horn long and acute; posterior process long, slender, deeply sulcate at the base, curved at the middle into a high, triangular, acute eminence, distant from the abdomen, thereafter sloping to the very much attenuated apex which just passes the tip of the abdomen, but does not reach the apices of the tegmina.

Tegmina pale tawny, punctured at the base and along the costa, a spot at the interior angle, and the veins surrounding the interior discoidal cell, ferruginous.

Abdomen varies in colour from red to ferruginous.

Legs ferruginous, tibiæ with a row of golden hairs along each angle; tips of tarsi piceous.

Long. ♀ 6; lat. 2; incl. lat. corn. 4 mm.

Type in British Museum.

Hab.—Moreton Bay, Q. (Walker): South Australia (Tepper).

*A. TRISPINIFER, Fairm.

(Plate i., fig. 7.)

1846, *Centrotus trispinifer*, Ann. Soc. Ent. Fr. (2), iv. p. 515, pl. viii., fig. 35.

Head fuscous, recurved, ocelli on a line with the centre of, and a little nearer to each other than to the eyes.

Prothorax ferruginous brown to piceous; armed over each lateral angle with a long, sharp horn, extending directly outward, apex turned a little downward and backward, superior surface with two small carinae; dorsal horn triangular, stout and pointed; posterior process sulcate above the basal half, then forming an obtuse angle, the apical half turned downward, not reaching apex of abdomen.

Tegmina ferruginous, costa, base, and apical third somewhat opaque; corium with a light transverse band passing across the middle; exterior discoidal cell about one-half the size of interior.

Chest black, with a light ferruginous spot on each side.

Legs fuscous.

Long. ♂ 6, ♀ 7; lat. (incl. lat. corn.) ♂ 4, ♀ 4 mm.

Type in Coll. Westwood.

Hab.—New Holland (Fairmaire): Huon R., Hobart, Mount Wellington, Tasmania (Lea): Tweed R., N.S.W. (Lea); Gloucester, N.S.W. (Froggatt): South Australia (Tepper): Victoria (Kershaw).

*A. GRACILISPINUS, Stal.

1869, Ofv. K. Vet. Akad. Forh. p. 287.

Ferruginous, some silky white pubescence.

Prothorax punctured; lateral horns long, turned directly upward and obliquely upward, lightly decurved toward apex; the dorsal horn is erect, slender, rather long; posterior process distinctly curved behind the middle, while in front it is a little elevated.

Tegmina grayish hyaline, bases and towards apices ferruginous, base and costa punctured.

Scutellum and chest densely silky.

Long. ♀ $5\frac{1}{2}$; lat. $2\frac{1}{2}$ mm.

Type in Mus. Holm.

Hab.—Northern Australia (Stal): Bruni Is., Tasmania (Lea): Victoria (French): South Australia (Tepper): Bunbury, West Australia (Lea): Clarence R., Tweed R., N.S.W. (Lea).

This species is closely related to *A. trispinifer*; it differs in the longer lateral horns, which ascend obliquely, while the dorsal horn is longer, more slender and acute.

**A. CONSPURCATUS*, Stal.

1869, Ofv. K. Vet. Akad. Forh. p. 288.

Ferruginous, punctured.

Prothoracic lateral horns medium, turned forward and distinctly upward, very slightly curved; median longitudinal carina elevated, behind the lateral horns, in an obtuse angle; posterior process lightly curved.

Tegmina sordid hyaline, base and costa ferruginous and punctured, with an obsolete apical ferruginous spot; with two discoidal cells.

Long. ♀ $4\frac{2}{3}$; lat. 2 mm.

Type in Mus. Holm.

Hab.—West Australia (Stal): Tweed R., Blue Mts., N.S.W. (Froggatt): Mt. Wellington, Huon R., Tasmania (Lea): South Australia (Tepper): Victoria (French).

Closely allied to *A. trispinifer*, but differs in the lateral horns being turned distinctly upward and the dorsum destitute of an acute median horn.

**A. BISPINUS*, Stal.

1869, Ofv. K. Vet. Akad. Forh. p. 288.

Ferruginous black, punctured.

Prothoracic lateral horn short, directed outward, destitute of a horn or angle behind these horns; posterior process lightly curved, and lightly foliaceous at base.

Tegmina subvinaceous hyaline, base and costa ferruginous and punctured; base of third apical cell curved toward interior. Sides of chest and scutellum densely silky gray, pubescent.

Long. ♂ $4\frac{1}{2}$, ♀ 5; lat. 2 mm.

Type in Mus. Holm.

Food plant, *Acacia pycnantha*.

Hab.—Australia (Stal): Homebush, Tweed R., Sydney, N.S.W. (Lea); Clermont, Tweed R., Maitland, Mittagong, Richmond R., N.S.W. (Froggatt): Swan R., Geraldton, Pinjarrah, West Australia (Lea): Largs Bay, N. Mecklenburg, South Australia (Tepper): Victoria (French): Tasmania (Simson).

Resembles the preceding, differing from it in the lateral horns being turned outward, and the median carina not elevated in an angle or horn, but slightly foliaceous at middle. The male is smaller, its lateral horns very diminutive.

*A. KERSHAWI, sp.nov.

Head black, triangular, apex acute, strongly curved backward. Eyes prominent; ocelli above a line passing through centre of eyes, near base, nearer to eyes than to each other.

Prothorax inclined backward from base, piceous brown, covered with yellow hairs; lateral horns short, turned directly outward, horizontal, slender, very acute; posterior process obtusely angled at base, thereafter slender, strongly sinuous to decurved acuminate apex, which does not reach the tips of tegmina.

Tegmina with the costa and clavus entirely opaque and punctured, two discoidal cells, the second nearly circular, almost reaching exterior border of corium; veins brown, covered with yellow hairs; third apical cell crescentiform.

Body, femora and tarsi black.

Long. ♂ $3\frac{1}{2}$, ♀ 4 mm.; lat. ♂ 1, ♀ $1\frac{1}{2}$ mm.

Described from one male and two females.

Types in Coll. F.W.G.

Hab.—Thornleigh, Blue Mts., N.S.W. (Froggatt).



Dedicated to Mr. J. A. Kershaw, of the Melbourne Museum, who supplied me with a number of interesting Australian forms.

SERTORIUS, Stal.

1866, Hemiptera Africana, iv. p. 88.

Prothorax rising vertically from the base, furnished with an acute or equally broad horn, on each side, above lateral angles, distant between bases; posterior process touching scutellum, not distant; the median carina not elevated, but percurrent.

Tegmina with five oblong apical and two discoidal cells; the two ulnar veins of the corium joined near base by a transverse venule; exterior discoidal cell not petiolate; costal cell punctured and opaque, extended beyond radial; clavus with two veins, gradually narrowed to apex.

Wings with four apical cells.

Scutellum transverse or almost equally long and wide, apex truncate, ending on each side, in a little tooth.

Tibiæ and tarsi simple, not dilated.

Type, *Centrotus australis*, Fairm.

SYNOPSIS OF SPECIES.

- | | |
|---|----------------------|
| 1 (2). Lateral horns very short and small, third apical cell of tegmina long, straight; females with, and males destitute of, transverse venule between two ulnar veins, near base..... | <i>australis</i> . |
| 2 (1). Lateral horns large and strong. | |
| 3 (10). Lateral horns conical, gradually narrowed towards apices. | |
| 4 (9). Third apical cell of corium long, narrow. | |
| 5 (6). Third apical cell of corium furnished with transverse venules..... | <i>areolatus</i> . |
| 6 (5). Third apical cell of corium destitute of transverse venules. | |
| 7 (8). Lateral horns turned outward and backward, short; tegmina more or less piceous | <i>brevicornis</i> . |
| 8 (7). Lateral horns turned outward and forward; tegmina transparent smoky yellow..... | <i>Tepperi</i> . |

- 9 (4). Third apical cell of corium not narrow; apex of first apical cell of corium not extended beyond base of second apical cell; tegmina colourless, veins piceous, cells short..... *curvicaudus*.
- 10 (3). Lateral horns with sides parallel, not, or very slightly, narrowed towards apices which are subtruncated, anterior angle rounded, posterior acute.
- 11 (12). Lateral horns turned directly outward, lightly upward, broad at bases, widely separated, very strong..... *giganticus*.
- 12 (11). Lateral horns long, slender, very lightly curved, turned outward, strongly upward, narrow at base..... *acanthaspis*.

*S. AUSTRALIS, Fairm.

1846, *Centrotus australis*, Ann. Soc. Ent. Fr. (2), iv. p. 518.

1858, *Centrotus obstans*, Walk., List Hom. Brit. Mus. Suppl. p. 162.

1858, *Centrotus binotatus*, Walk., Ins. Saund. Hom. p. 81.

Head piceous, broad, short, a small tooth on each side of the apex which is curved backward.

Eyes large, prominent beyond sides of the prothorax; ocelli above line passing through centre of the eyes, to which they approach more nearly than to each other; base lightly curved.

Prothorax piceous, convex, coarsely punctured, with a median longitudinal carina; lateral horns very small, short, conical, extended directly outward; posterior process broad at base, gradually narrowed to the middle, thereafter slender, acuminate, decurved, reaching apices of tegmina; at the base it is notched showing the white tomentum on the scutellum.

Tegmina vitreous, tinged with yellow, the base, a spot at the interior angle, and veins ferruginous; a transverse venule between two ulnar veins near base in the female, absent in the male; clavus vitreous.

Legs ferruginous; tarsi piceous.

Long. ♀ 7, ♂ 6; lat. ♀ 3, ♂ $2\frac{1}{2}$ mm.; incl. lat. corn. ♀ 4, ♂ 3 mm.

Types in Coll. Fairmaire, British Museum and Coll. W. W. Saunders.

Hab.—New Holland (Fairmaire): Gosford, N.S.W. (Lea): Victoria (Kershaw): Tasmania (Simson): Williamstown, South Australia (Tepper).

My opinion is that *Terentius convexus*, Stal, is a horned form of this species.

*S. ACANTHASPIS, Fairm.

1846, *Centrotus acanthaspis*, Ann. Soc. Ent. Fr. (2), iv. p. 515.

1851, *Centrotus decisus*, Walk., List Hom. Brit. Mus. p. 621.

Head spindle-shaped, apex not produced, brown, punctured, lateral borders a trifle foliaceous; ocelli on a line with the centre of and approaching to the eyes; with a median carina; base lightly curved.

Prothorax punctured, brown, with scattered yellow hairs, and a smooth black scar on each side in front; lateral horns turned outward, a little upward and forward, strongly triquetrous, bases far apart, apices obtuse; posterior process thickened at base, gradually acuminate to the decurved apex which reaches the tips of the tegmina, passing apex of abdomen, the inferior edge sinuate. There is some yellow pubescence on the sides of the chest and on the scutellum.

Tegmina transparent, a little smoky yellow, bases of clavus and radial cell, and nearly all of the costal cell, with the veins, ferruginous.

Legs ferruginous.

Long. 9; lat. 3 mm., incl. lat. corn. 5 mm.

Types in the Museum of the Entomological Society of France and the British Museum.

Hab.—Port Jackson (Fairmaire); Tweed R., Tamworth, Wellington, N.S.W. (Froggatt): Highfields, Q. (Tryon): Murray R., South Australia (Tepper).

*S. GIGANTICUS, sp. nov.

(Plate i., fig 1.)

Head black, broad, punctured and impressed, apex produced, lateral borders with a denticle near base; ocelli equidistant from

each other and the eyes, and on a line through the centre of the eyes; base lightly curved.

Prothorax black, densely and rudely punctured, furnished with a median carina, and armed above each lateral angle with a strong, triquetrous horn, which is turned outward and a little upward, not at all forward, broad, compressed, and flattened at apex, which is obtusely rounded, the posterior angle acuminate; the posterior surface is broadest, on the inner surface several carinæ; dorsum between the lateral horns broad, flat, increasing in altitude backward; posterior process starts from the highest point, is tectiform, and broad for some distance from the base, thereafter gradually acuminate to the apex which just passes the tip of the abdomen; laterally there are a few carinæ.

Tegmina ferruginous, opaque, basal portion and nearly all of costal cell punctured, a white spot at the interior angle.

Legs piceous, tibiæ triquetrous.

Long. ♀ 12; lat. 4 mm., incl. lat. corn. 6 mm.

Described from two females.

Types in Coll. F.W.G.

Hab.—South Australia (Tepper).

This is the largest Membracid yet found in Australia.

**S. BREVICORNIS*, sp.nov.

Head piceous, covered with yellow hairs, with an abbreviated median carina in the centre between the ocelli, two small tubercles below and forming a square with the ocelli, lateral borders with a denticle near base; ocelli on a line passing through the centre of the eyes and equidistant from them and from each other; base lightly curved.

Prothorax piceous brown, the dorsum convex, blackish along the middle, and furnished with a strong, black median longitudinal carina; on each side of the dorsum, above lateral angles, is a short, stout, triquetrous, auricular horn turned upward, which is blackish on the convex superior surface towards the very obtuse tip, which ends in a blunt point, pointing outward, and a trifle backward; the horn is elevated but little above the middle

of the dorsum; the posterior process is triquetrous, tectiform, lightly gibbous at the base, broad for a distance, thereafter gradually acuminate to the apex which reaches the end of the abdomen.

Tegmina broad, basal third black, punctured and opaque, the remainder transparent smoky, veins, and a large spot on the disk, piceous.

Sides of the chest and scutellum yellow pubescent.

Legs strong, piceous; tibiæ triquetrous, slightly flattened, a central carina from base to apex.

Long. ♀ 6; lat. 3 mm., incl. lat. corn. 4 mm.

Described from two females.

Types in Coll. F.W.G.

Hab.—South Australia (Tepper): Mt. Barker, West Australia (Lea).

The ear-shaped lateral horns will easily distinguish this species.

*S. TEPPERI, sp. nov.

Head black, punctured, triangular, apex produced strongly backward; ocelli on a line with superior border of eyes and equidistant from them and from each other.

Prothorax piceous brown, base black, punctured, furnished with a median percurrent carina, and armed on each side, above lateral angles, with a short, stout, triquetrous, acuminate horn turned upward, very lightly outward, and strongly forward, the upper surface marked with two or three small carinæ near the front edge, the posterior edge of each horn continued for some distance on the posterior process as a carina, parallel to the median carina; posterior process very broad and convex at base, gradually narrowed to the middle, thereafter slender and acuminate, reaching tips of tegmina.

Tegmina smoky yellow, basal fourth piceous, punctured and opaque, the remainder transparent, veins ferruginous and thick.

Body below black; tibiæ and tarsi lighter.

Long. ♀ 6; lat. 2 mm.; incl. lat. corn. 3 mm.

Described from two females.

Types in Coll. F.W.G.

Hab.—Bunbury, West Australia (Lea).

Dedicated to Mr. J. G. O. Tepper, Entomologist to the South Australian Museum, who has been most liberal in his donation of material.

S. AREOLATUS, sp.nov.

(Plate i., fig. 3.)

A long, slender, short-horned, ferruginous species.

Head punctured, covered with yellow hairs, the base nearly straight, apex recurved; ocelli above a line passing through the centre of the eyes from which they are about equidistant and from each other.

Prothorax punctured, covered with yellow hairs, with a long shining scar over each eye; furnished with a percurrent median carina; it is armed on each side, above lateral angles, with a triquetous, conical, almost erect horn which is turned strongly upward, a little inclined outward, the obtusely pointed tip turned directly outward, with three small carinæ on the superior surface; posterior process tectiform, straight, sinuate along inferior border, narrow at base, long and slender, gradually acuminate to apex which curves strongly downward, reaching tips of tegmina.

Tegmina long, narrow, lanceolate, smoky, vitreous, base and veins ferruginous, a piceous spot on interior angle, and veins surrounding third apical cell, of the same colour; corium with long, narrow, discoidal cells, of equal size, the third apical cell, very long and narrow, crossed by several transverse venules.

Sides of chest and scutellum covered with yellow down. Femora black, tibiæ and tarsi ferruginous.

Long. 7; lat. 2 mm.; incl. lat. corn. 4 mm.

Described from five males and eight females.

Types in Coll. F.W.G.

Hab.—Victoria (Kershaw): South Australia (Tepper): Braidwood and Queanbeyan, N.S.W. (Lea).

This species may easily be separated from its congeners by the long, narrow, slender form, and areolated third apical cell.

**S. CURVICAUDUS*, sp.nov.

Head triangular, base nearly straight, lateral borders denticulate; ocelli on a line passing through centre of eyes, and equidistant from each other and the eyes.

Prothorax piceous, with a median percurrent carina, armed on each side with a rather long, very flat horn turned almost directly outward, very slightly upward, apex curved a little backward, and but little elevated above dorsum; posterior process very broad from base to middle, then slender and gradually acuminate to the apex, strongly decurved from base to the apex which reaches tips of tegmina.

Tegmina with very little of base punctured, vitreous, and transparent, veins piceous, corium with first discoidal cell about one-half the size of the second, the second apical cell very small.

Long. 7; lat. 2 mm.; incl. lat. corn. 5 mm.

Described from two males.

Types in Coll. F.W.G.

Hab.—Tweed River, N.S.W. (Froggatt).

A small piceous species with the posterior process strongly curved downward from base to apex.

EUFRENCHIA, gen.nov.

Head nearly triangular, lateral border denticulate, convex in front, base nearly straight; eyes prominent outward.

Prothorax rudely punctured or reticulate, rises vertically from base, armed on each side with a long, strong, vertical, flattened horn, with sides parallel, superior part curved outward, falciform, apex obtuse, with two little teeth, between which is a shallow sulcus; posterior process long, slender, apex lightly decurved slightly passing apices of tegmina; lateral horns near at bases, between which median carina is obsolete.

Tegmina with cells of corium narrow, three discoidal cells, the first placed between the radial and first ulnar veins in front of second apical cell, second and third between the first and second

ulnar veins behind the third and fourth apical cells; furnished with a transverse venule between the two ulnar veins, near base.

Wings with four apical cells.

Tibiæ flattened and lightly dilated.

Type, *Centrotus falcatus*, Walk.

This genus differs from the last section of *Sertorius* in having three discoidal cells.

Dedicated to Mr. Charles French, Government Entomologist of Victoria, for his uniform kindness and courtesy.

SYNOPSIS OF SPECIES.

- 1 (2). Falciform portion of lateral horns brief, base of posterior process broad..... *Lee*.
 2 (1). Falciform portion of lateral horns very long, base of posterior process proportionately slender..... *falcata*.

*E. FALCATA, Walk.

1851, *Centrotus falcatus*, List Hom. Brit. Mus. p. 62.

1869, *S. curvicornis*, Stal, Ofv. K. Vet. Ak. Forh. p. 287.

Head piceous, punctulate; ocelli above a line passing through centre of eyes, a little nearer to the eye than to each other.

Prothorax fusco-ferruginous, densely and strongly punctured, almost reticulate with a median longitudinal carina which is interrupted between lateral horns, seen from front, narrowed upward, lateral horns contiguous at base, erect to middle, then strongly curved outward and downward, broad, long, sides parallel, apices truncated, anterior apical angle rounded, posterior angle in a prominent tooth; posterior process convex, rather slender, curved downward from middle, apex black, reaching tips of tegmina.

Tegmina pale subfuscous hyaline, veins fuscous, punctured on each side, the basal and costal cell subferruginous, punctured beyond middle. Chest black, a spot on chest and scutellum yellowish-gray pubescent.

Long. ♂ 5, ♀ 6; lat. ♂ 2, ♀ 2½; exp. corn. ♂ 6, ♀ 7 mm.

Female differs little from male.

Types in British Museum and Mus. Holm.

Hab.—Adelaide, South Australia (Stal) : Van Dieman's Land (Walker).

*E. LEÆ, sp.nov

(Plate i., fig. 5.)

Head black, punctured; ocelli as in *fulcatus*.

Prothorax dark ferruginous, punctured; lateral horns, not contiguous at bases, extend upward and strongly forward, long, sides parallel, a small apical portion outward, apical angles as in *fulcatus*; posterior process tectiform, not convex, strong and broad at base, gradually narrowed to apex which reaches apices of tegmina.

Tegmina ferruginous, opaque, veins darker and punctured along their sides, one-third of clavus and radial cell, and all of costa, densely opaque and punctured, and opaque spot on apex of first apical cell.

Long. ♀ 6; lat. $1\frac{3}{4}$; exp. lat. corn. 3 to $3\frac{1}{2}$ mm.

Described from seven females.

Types in Coll. F.W.G.

Hab.—West Australia (Lea).

Dedicated to Mr. A. M. Lea, Government Entomologist of Tasmania, who kindly presented this and other interesting forms.

CENTROTYPUS, Stal.

1866, Hemiptera Africana, iv. p. 88.

Front a little prominent downward; ocelli lightly prominent; destitute of lobes on lateral borders.

Prothorax horned above lateral angles, the horns triquetrous, conical; the posterior process acuminate, almost covering scutellum; median carina a smooth line anteriorly.

Tegmina with five apical and two discoidal cells, the interior petiolate, the two ulnar veins not joined, near the base, with a transverse venule; costal and radial cells almost equally long.

Wings with four apical cells.

Tibiæ simple.

Type, *Centrotus flexuosus*, Fabr.

This genus differs from *Sertorius* only in the absence of the transverse venule between the two ulnar veins, a very weak character.

SYNOPSIS OF SPECIES.

- 1 (2). Third apical cell straight, first discoidal cell long, narrow, two-thirds length of second; lateral horns turned outward, downward and backward; size large. *occidentalis*.
- 2 (1). Third apical cell crescentiform, base curved toward interior angle; first discoidal cell triangular, small; lateral horns very short and minute; size very small. *minutus*.

*C. OCCIDENTALIS, sp.nov.

Ferruginous, the head, base of prothorax excepting the edge, tips of lateral horns, chest, abdomen, femora excepting the tips, a spot on the tibiæ, and tips of tarsi, black.

Head as long as broad, base strongly curved, the apex produced downward, toothed on lateral borders, punctured; ocelli white, placed above a line passing centre of eyes to which they approach nearer than to each other.

Prothorax punctured, furnished with a percurrent median carina; dorsum convex, armed on each side, above lateral angles, with a short, flat, conical horn, compressed infero-superiorly, turned directly outward, apex obtuse, inclined a little downward and backward, the upper surface with the dorsum, convex; posterior process stout at the base, not tectiform, sinuous along inferior border, and gradually acuminate to the apex which reaches the tips of the tegmina.

Tegmina vitreous, clear, veins ferruginous, punctured at base, a blackish cloud near base of clavus; first discoidal cell two-thirds length of second, equal to and lying alongside of first apical cell.

Long. $6\frac{1}{2}$; lat. $2\frac{1}{2}$; incl. lat. corn. 4 mm.

♀ Differs from the male in being tawny yellow, and ferruginous where the male is marked with black, and the larger size.

Long. 9; lat. $3\frac{1}{2}$; incl. lat. corn. 5 mm.

Described from two males and one female.

Types in Coll. F.W.G.

Hab.—Swan River, West Australia (Lea).

**C. MINUTUS*, sp.nov.

Head black, triangular, deorsum, with scattered yellow hairs; ocelli above a line passing through centre of eyes to which they are nearer than to each other, base barely curved.

Prothorax black at base, and apex, otherwise dark brown, convex, armed on each side above lateral angles with a very minute pointed horn extended directly outward; the dorsum most elevated at base of posterior process which is distinctly sinuous, tectiform, acuminate, apex reaching end of abdomen, but shorter than apices of tegmina.

Tegmina broad, short, ferruginous, and punctured at base, nearly all of costal and basal third of radial cells punctured and opaque; corium with the first discoidal cell triangular, half size of second, the second long narrow, directed diagonally to apical veins; third apical cell with base curved toward interior angle; veins milky white; first apical cell minute.

Body below black. Tibiæ and tarsi ferruginous.

Long. 3; lat. 1 mm.; but little broader between apices of lateral horns.

The female differs from the male in the lateral horns which are little more than minute tubercles, and the broader basal cells.

Described from three males and one female.

Types in Coll. F.W.G.

Hab.—South Australia (Tepper): Mosman's Bay, N.S.W. (Froggatt); Clarence River, Tamworth, N.S.W. (Lea).

This minute species is the smallest yet found in Australia, and the smallest of the genus known.

LUBRA, gen.nov.

Head triangular, lateral borders sinuous.

Prothorax rising vertically from the base, the dorsum appears to divide into two long anteriorly inclined horns which are en-

larged towards the apex rounded on the top (not truncated), the inner angles produced in triangular acuminate spines, the surface reticulated; the posterior process is much shorter than the tegmina and sinuate.

Tegmina with two discoidal cells, the second petiolate, furnished with a transverse venule between two ulnar veins, near base.

Wings with four apical cells.

Legs very slightly flattened.

I have chosen for the name of this genus the aboriginal word meaning "wife." It is closely related to *Daurus*.

SYNOPSIS OF SPECIES.

- 1 (2). Apices of dorsal horns furnished with a slender spine on the outer side, converging to form an arch by the meeting of the acuminate interior angles of the apices *regalis*.
 2 (1). Apices of dorsal horns widely separated; interior angle of each apex not acuminate, but gibbous, with a slender spine on exterior angle..... *spinicornis*.

**L. SPINICORNIS*, Walk.

1862, *Oxyrhachis spinicornis*, Journ. Ent. i. p. 316.

Head piceous, strongly punctured; ocelli on a line passing through centre of eyes, and a little nearer to the eyes than to each other.

Prothorax dilute piceous, rising vertically from the base with the lateral horns thick, very long, erect, slightly inclined forward, curved, thickly and rudely reticulated; the apex is much thickened, and armed with a sharp spine on the outer side, extending directly outward; posterior process very long and slender, apex decurved, reaching apices of the tegmina.

Tegmina broad, vinaceous, veins darker, base and nearly all of costa ferruginous, opaque and punctured, the third apical cell normal, basal half of clavus punctured and opaque.

Chest with yellow pubescence.

Legs ferruginous.

Long. ♀ 8; lat. 3 mm.

Type in the British Museum.

Hab.—Moreton Bay, Q. (Walker): Tweed River, N.S.W. (Froggatt); Clarence River, N.S.W. (Lea).

**L. REGALIS*, sp.nov.

(Plate i., figs. 4 and 9).

Head piceous, triangular, with two minute tubercles on each side on the lateral borders; ocelli near the base, above a line passing through the centre of eyes, equidistant from each other and the eyes.

Prothorax dark ferruginous, rising vertically from the base, laterally compressed, the dorsum widened on each side into a long laterally compressed horn, which is much thickened and reticulated towards the apex and much inclined forward, the apex curved inward ending in a triangular point which meets with its fellow forming the half of a circle, bearing a short, stout, sharp spine on the exterior surface; the posterior process is very slender, sinuous, much shorter than the tegmina, the apex acuminate.

Tegmina clear, vitreous, with the entire basal fourth ferruginous, punctured and opaque, the veins and a large spot of the same colour on the apices; clavus gradually acuminate, vitreous, ferruginous at the base, with two veins.

Legs light ferruginous, tips of tarsi piceous.

Described from one example, the body of which is wanting.

Type in Coll. F.W.G.

Hab.—Brisbane, Q. (Tryon).

DAUNUS, Stal.

1866, Hemiptera Africana, iv. p. 87.

Prothorax elevated, furnished with a median carina, armed on each side above lateral angles with a broad horn, triquetrous at the base, compressed upward from front and behind; apex broadened, truncated, sometimes furnished with a very short spine; posterior process acuminate, rarely reaching apices of tegmina.

Tegmina destitute of transverse venule between two ulnar veins, near base, with five oblong apical and two discoidal cells, the interior petiolate; costal cell extended beyond radial, both punctured and opaque; exterior discoidal cell not petiolate; clavus punctured and opaque at base, with two veins, gradually narrowed to apex.

Wings with four apical cells.

Scutellum transverse, almost equally long and wide, apex truncated, ending on each side in a little tooth.

Tibiæ and tarsi simple (in one species dilated).

Type, *Centrotus Tasmaniae*, Fairm.

SYNOPSIS OF SPECIES.

- 1 (4). Lateral horns nearly erect; apex of posterior process not passing tips of tegmina; head triangular; tibiæ not dilated.
- 2 (3). Corium furnished with a longitudinal, ferruginous stripe along middle from base to apex; third apical cell normal..... *vitta*.
- 3 (2). Corium smoky yellow, destitute of ferruginous stripe; third apical cell furnished with transverse venules..... *Tasmaniae*.
- 4 (1). Lateral horns inclined forward; apex of posterior process far surpassing tips of tegmina; head nearly square, lateral borders foliaceous; front tibiæ dilated..... *gracilis*.

*D. TASMANIÆ, Fairm.

(Plate i., figs. 6 and 20).

1846, *Centrotus Tasmaniae*, Ann. Soc. Ent. Fr. (2), iv. p. 513, pl. 3, fig. 15.

1851, *Centrotus contractus*, Walk., List Hom. Brit. Mus. p. 622.

1858, *Centrotus truncaticornis*, Walk., Ins. Saunders. Hom. p. 81.

Head black, triangular, apex a little recurved; ocelli on a line with centre of eyes, and a little further from each other than from the eyes.

Prothorax dark ferruginous brown, punctured, rising vertically from base, lateral horns strong, upright, a little diverging, somewhat constricted along middle, dilated at the apex, which is

truncated, the inferior angle being acute; the inner and anterior surfaces with little carinæ; lateral angles prominent; posterior process long, slender, straight, the apex a little decurved, reaching the tip of the abdomen, but much shorter than the tegmina.

Tegmina broad, ferruginous, costa and base punctured and opaque, the third apical cell of corium with several transverse venules; clavus punctured at base, gradually narrowed to apex, with two veins.

Chest and abdomen piceous, covered with dense white pubescence.

Legs piceous.

Long. ♂ 7, ♀ 9; lat. ♂ 2, ♀ 3 mm.

Types in Collections of Serville, Signoret and Lefèbre, British Museum, and W. W. Saunders.

Hab.—New Holland (Fairmaire): Hobart, Tasmania (Lea): Gisborne (French); Port Phillip, Victoria (Walker): Brisbane, Q. (Tryon).

This is the most common species in Tasmania.

*D. VITTA, Walk.

(Plate i., fig. 25).

1851, *Centrotus vitta*, Walk., List Hom. Brit. Mus. p. 626.

1858, *Oxyrhachis contorta*, Walk., Ins. Saunds. Hom. p. 66.

Head triangular, ferruginous, punctured, ocelli on a line with the centre of, and much nearer to each other than to the eyes.

Prothorax ferruginous, lightly pubescent, vertical in front; the lateral horns almost erect, triquetrous, much more widely separated at the apices than at bases; two carinæ on the inner surface; apices much broadened, outer angle acutely produced, inner angle rounded; posterior process long, slender, sinuous at the middle, apex reaching almost to the tips of tegmina.

Tegmina long, clear, lanceolate, base ferruginous, and punctured; veins, and a broad longitudinal stripe along the middle of corium, ferruginous, the discoidal cells of equal size; clavus gradually acuminate, the base, a large spot at the middle and one at the apex, ferruginous.



Legs ferruginous, tips of tarsi piceous.

Long. ♂ 6, ♀ 7; lat. ♂ 2, ♀ 2½ mm.

Food plant, *Acacia decurrens*.

Hab.—Tasmania (Walker): Camden Haven, Penrith, Sydney, N.S.W. (Froggatt); Queanbeyan, Bungendore, N.S.W. (Lea): South Australia (Tepper).

This species is easily recognised by the slender form, and the ferruginous stripe on the tegmina.

**D. GRACILIS*, sp.nov.

Head piceous, nearly square, the apical portion nearly as broad as the base, sides foliaceous; ocelli on a line with the centre of the eyes, nearer to the eyes than to each other.

Prothorax piceous brown, punctured with black, with a distinct median carina; it rises vertically from the base, over each lateral angle furnished with a strong, quadrangular, black, nearly erect horn, which is inclined lightly outward, strongly forward, the sides parallel nearly to the apex, which is broadened, truncate, the inner angle slightly rounded, the outer angle produced in a blunt point; the truncated surface is marked with four reddish carinae; the posterior process is very slender, lightly sinuous, acuminate, exceptionally long, reaching beyond the tips of the tegmina, the apical fifth bent a little upward.

Tegmina long, very narrow, vitreous, with piceous veins; the interior discoidal cell longer than exterior, the last four apical cells with their bases in a line, the first placed nearly at the middle of the exterior border; clavus vitreous, with two piceous veins.

Tibiae reddish, all dilated; tarsi tawny.

Long. ♀ 7½; lat. 1½ mm.; lat. incl. lat. corn. 3½ mm.

Described from one female.

Type in Coll. F.W.G.

Hab.—West Australia (Lea).

The species may be easily recognised by the long, very slender form, the vitreous tegmina, and the dilated tibiae. It is closely

related to the subfamily *Membracinae*, but the exposed sides of the scutellum place it outside of that group.

EUTRYONIA, gen.nov.

Head triangular, recurved, ocelli above a line passing through the centre of eyes, equidistant from each other and the eyes.

Prothorax elevated into a convex, dome-shaped form, above which rises a very high, strong, erect process, laterally compressed, dilated at the apex in a very large transverse, cylindrical process which is deeply sulcate in the middle, antero-posteriorly, and armed on each side with a directly diverging long, very acute spine; at the middle of this process, posteriorly, is a large tuberosity, below which is a large gibbosity; some distance behind the lateral angles the prothorax is suddenly narrowed, and produced into a long, slender, sinuous, acuminate process, the apical half distant from the abdomen, the apex reaching tips of tegmina, curving downwards.

Tegmina coriaceous, opaque, ferruginous; costa punctured; corium with two discoidal cells, the exterior triangular, the interior oblong, petiolate, and about twice larger, destitute of a transverse venule between two ulnar veins, near base; clavus gradually acuminate, with two veins.

Wings vitreous, with four apical cells.

Tibiae with the anterior and middle pairs dilated.

Type, *Centrotus monstrifer*, Walk.

Dedicated to Mr. Henry Tryon, the Queensland Government Entomologist, who kindly placed this and other interesting material in my hands for study.

*E. MONSTRIFERA, Walk.

(Plate i., figs. 10, 11, 22 and 26).

1858, *Centrotus monstrifer*, Walk., Ins. Saunds. Hom. p. 80.

1862, *Oxyrhachis ponderifer*, Walk., Jour. Ent. i. p. 316.

Piceous brown, pubescent, apex of dorsal horn marked with luteous, also the lateral spines, the posterior process with a broad band of the same colour.

Tegmina ferruginous, coriaceous and opaque, with a Y-shaped white band across the middle, another band across the discoidal portion; tips of tarsi luteous.

Abdominal joints luteous.

♀. Long. 6; lat. 2 mm.

Types in the Collection of W. W. Saunders, and in the British Museum.

Hab.—Hunter R., N.S.W., Moreton Bay (Walker): Rockhampton, Q. (Tryon): Tweed R., N.S.W. (Froggatt).

Eutryonia is closely related to *Sphongophorus* of America, but the exposed sides of the scutellum place it in the subfamily *Centrotinae*.

HYP SOPRO RA, Stal (Subfamily *Membracinae*).

1869, Ofv. K. Vet. Ak. Forh. p. 277.

Head with lateral margins straight towards the eyes, foliaceous.

Prothorax on the dorsum, in front, armed with an elevated process, erect or inclined; posterior process covering scutellum, on each side behind the middle carinated, or with a large tubercle, which is prominent beyond the sides of the process.

Tegmina more or less coriaceous and opaque.

Tibiae with the anterior pair dilated, foliaceous; tarsi simple.

Type, *Pterygia pileata*, Fairm.

H. CASSIS, Buck.

1901, Monog. Ent. p. 60, pl. ix., ♂ fig. 2; ♀ fig. 3

General colour, dark brown (♂), ochreous yellow (♀).

Head dilated, foliaceous.

Prothorax on the dorsum furnished with a pointed protuberance between the shoulders resembling a helmet, produced posteriorly at the base in a large tuberosity, and at the apex similarly produced; furnished with a posterior process.

Tibiae subspatulate, foliaceous.

Long. ♂ 6, ♀ 7; lat. 5 mm.

Hab.—North Australia (Wollaston).

This crude description is taken from Buckton's work, and I follow him in placing the species in the above genus, but with hesitation, as I have not seen an example. My opinion is that it should be placed elsewhere.

PHILYA, Walk. (Subfamily *Membracinae*).

1858, List Hom. Brit. Mus. Suppl. p. 126.

1858, (?) *Azinia*, Walk., Ins. Saunds. Hom. p. 63.

1869, *Aechmophora*, Stal, Kong. Sv. Vet. Ak. Handl. viii., p. 39.

Head with lateral margins straight towards the eyes, foliaceous.

Prothorax low, not compresso-elevated, middle of dorsum acutely carinated, furnished with a long, thick subcompressed, porrect process, the apex ascending; posterior process long, reaching nearly to the apex of tegmina, somewhat narrowed towards apex, subcoarctate in front of middle.

Tegmina coriaceous, opaque, with venation indistinct.

Tibiæ dilated, foliaceous; tarsi simple.

Types, *P. bicolor* (in British Museum), *A. elephas* (Mus. Holm. et Stal), *A. pallidipennis* (Coll. W. W. Saunders).

(?) *P. PARVULA*, Buck.

1901, Monog. Ent. p. 57, pl. viii., fig. 4.

Eyes prominent, abnormally placed on the side, and high on the head. The colour is dusky ochreous-brown, the anterior horn developed into a recurved process, with lateral carinæ, apex truncated.

Legs lightly flattened.

Long. 5 mm.; lat. 1 mm.

Hab.—West Australia (Haswell).

Buckton places this species in the above genus with hesitation, stating that it closely resembles the *Fulgorida*. I doubt if he has correctly located it.

EUFROGGATTIA, gen.nov.

Head small, triangular, base semicircular, eyes medium; ocelli situated high above the eyes near base of head, a little nearer to the eyes than to each other; apex broad, notched at middle.

Prothorax very broad, furnished with a median carina; rising perpendicularly from the head, above each lateral angle is a broad, flattened, strong, horn extended outward and a little forward, with sides parallel, apex truncated, at the superior angle bearing a short, slender spine at the side of which is a sulcus; posteriorly terminating, behind lateral horns, the posterior border lightly curved backward, destitute of a posterior process; scutellum very broad and long, resembling a shield, the sides parallel nearly to the apex which is very obtusely rounded and reaches end of abdomen; at the base of the scutellum is a dorsal protuberance of about the size of the lateral horns, pyramidal, truncated at the apex, the median carina continued on scutellum but terminating some distance in front of apex, much more distinct in female. The entire surface is rugose, two tubercles on each side of the median carina in front, three irregular rows of tubercles along the dorsum on each side, and a row along the edge of the abdomen, just below the tegmina.

Tegmina lying flat on the back largely concealed beneath the sides of scutellum, proportionately small, about one-fourth at outer basal portion coriaceous and densely opaque occupying triangular space at posterior edge of prothorax and sides of scutellum, the remaining part very delicate vitreous and smoky transparent, veins hardly distinguishable.

Abdomen large, fitting snugly beneath and reaching apex of scutellum.

Legs strong, tibiae not dilated; tarsi tri-articulate, ending in two strong claws.

Type, *E. tuberculata*, Godg.

I take pleasure in dedicating this genus to my esteemed friend Mr. W.W. Froggatt, Government Entomologist, who has rendered every assistance in my entomological studies.

E. TUBERCULATA, sp. nov.

(Plate i., figs. 17, 18 and 19).

♂. Fuscous, with apical half of head, a spot on each side of the median carina in front, the inferior surface of the lateral horns, a band between their bases, base of their spines, lateral posterior edge and median carina of dorsal horn, a spot on each side of the abdomen, and posterior tibiæ sordid yellow; chest black.

Long. ♂ 4; lat. incl. lat. corn. 3 mm.

♀ Similar to male, but larger.

Long. 4½; lat. incl. lat. corn. 3½ mm.

Described from one ♂ and one ♀.

Types in Coll. F.W.G.

Hab.—Wingham, N.S.W. (Froggatt).

This interesting species, in general appearance, reminds one of the genus *Tragopa*, Burm.; in that genus, however, the prothorax covers the entire upper surface of the body, including the scutellum.

PORCORHINUS, gen. nov.

Head large, porrect, quadrangular, superior surface nearly horizontal, lightly convex and furnished with a strong median longitudinal carina; ocelli below a line passing through centre of the prominent eyes, nearer to each other than to the eyes.

Prothorax, for some distance from the base, convex, nearly horizontal, conforming to the base of the porrect head, after which it is broadened, vertical, and produced above each lateral angle in a large, triquetrous, conical, ear-shaped horn, which extends upward, outward and forward, the apex turned a little backward; the dorsum is very broad between these horns, and destitute of a median longitudinal carina; destitute of a posterior process, the posterior edge deeply and broadly sulcate forward.

Scutellum as long as broad, the apex pointed, base rounded.

Tegmina long, broad, reticulate with numerous venules; clavus very broad at base, gradually acuminate to apex, with two veins.

Wings very large, nearly equal in size to the tegmina, with four apical cells, the first and third very long, the second shortest.

Legs very long, femora slender, cylindrical and curved; tibiæ slender, quadrilateral, the posterior pair with a row of denticles along the posterior edge; tarsi normal.

Type, *P. Mastersi*, Godg.

This genus reminds one of Amyot & Serville's *Nessorhinus*, but differs in being destitute of a posterior process and a dorsal horn; and of *Coloborrhis*, Germ., but differs in having lateral horns.

P. MASTERSI, sp.nov.

(Plate i., figs. 12, 15 and 16).

♂. Head ferruginous, mottled with yellow.

Prothorax ferruginous red, with a broad yellow band passing across the front.

Scutellum sordid yellow.

Tegmina with basal third yellow, punctured with ferruginous, the middle third ferruginous, the veins darker, the apical third clearer.

Abdomen salmon colour, genital apparatus tawny.

Femora tawny, apex black; tibiæ and tarsi tawny.

Long. ♂ 9; lat. $1\frac{1}{2}$.; incl. lat. corn. $3\frac{1}{2}$ mm.

The female is sordid green, the tips of the lateral horns brown.

Described from one male and one female.

Types, ♂ Coll. F.W.G.; ♀ Macleay Museum, Sydney.

Hab.—Sydney (Masters); Mt. Victoria, N.S.W. (Lea).

The head and prothorax, when seen from the side, resemble the head of a pig.

Dedicated to Mr. Masters, Curator of the Macleay Museum, Sydney, who first brought this species to my notice.

EXPLANATION OF PLATE I.

Fig. 1.—*Sertorius giganticus*, tegmina.

Fig. 2.—*Sextius virescens* „

Fig. 3.—*Sertorius areolatus* „

Fig. 4.—*Lubra regalis* „

Fig. 5.—*Eufrenchia Lea* „

Fig. 6.—*Daunus Tasmanic* „

- Fig. 7.—*Acanthucus trispinifer*, tegmina.
 Fig. 8.—*Terentius convexus*, tegmina.
 Fig. 9.—*Iubra regalis*, prothorax.
 Fig. 10.—*Eutryonia monstrifera*, side view.
 Fig. 11.— „ „ back view.
 Fig. 12.—*Porcorhinus Mastersi*, front view.
 Fig. 13.—*Acanthucus rufiventris*, side view.
 Fig. 14.—*Terentius convexus*, side view.
 Fig. 15.—*Porcorhinus Mastersi*, side view.
 Fig. 16.— „ „ wing.
 Fig. 17.—*Eufroggattia tuberculata*, wing
 Fig. 18.— „ „ dorsal surface.
 Fig. 19.— „ „ tegmina.
 Fig. 20.—*Daunus Tasmaniae*, pupa.
 Fig. 21.—*Dingkana borealis*, tegmina.
 Fig. 22.—*Eutryonia monstrifera*, prothorax.
 Fig. 23.—Unknown, West Aust.; pupa.
 Fig. 24.—*Sextius depressus*, pupa.
 Fig. 25.—*Daunus vitta*, tegmina.
 Fig. 26.—*Eutryonia monstrifera*, tegmina.

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